

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claims 1-86. (Canceled)

87. (Currently Amended) A DNA which upon transcription produces an RNA encoding a modified ~~HIV-1~~ gp140 polypeptide of an HIV-1 isolate, which polypeptide upon cleavage produces a modified gp120 and a modified gp41 ectodomain ~~of gp41~~ which together form a complex, said complex (i) exhibiting enhanced binding to HIV-1 neutralizing antibodies and reduced binding to HIV-1 non-neutralizing antibodies, wherein the modified gp120 ~~modifications~~ comprises an A492C mutation ~~in gp120~~ and the modified gp41 ectodomain comprises a T596C mutation ~~in gp41~~, said mutations being numbered by reference to ~~the HIV-1 isolate~~ JR-FL, and (ii) permitting the formation of ~~resulting in~~ a disulfide bond between the modified gp120 and the modified gp41 ectodomain ~~gp41~~ which stabilizes the complex ~~otherwise non-covalent gp120-gp41 interaction~~.
88. (Previously Presented) The DNA of claim 87, wherein the HIV-1 isolate represents a subtype selected from the group consisting of clades A, B, C, D, E, F, G, H and O.
89. (Previously Presented) The DNA of claim 88, wherein the HIV-1 isolate is HIV-1_{JR-FL}, HIV-1_{DH123}, HIV-1_{GUN-1}, HIV-1_{89.6} or HIV-1_{HXB2}.
90. (Previously Presented) The DNA of claim 87, wherein the

modified gp120 is further characterized by the absence of one or more of the variable loops present in unmodified gp120.

91. (Previously Presented) The DNA of claim 90, wherein the absent variable loop comprises V1, V2, V3 or a combination thereof.
92. (Previously Presented) The DNA of claim 90, wherein the absent variable loop comprises V1 and V2.
93. (Currently Amended) The DNA of claim 87, wherein the modified gp120 is further characterized by the ~~absence or~~ presence of one or more canonical glycosylation sites ~~present or absent, respectively,~~ in unmodified gp120..
94. (Canceled)
95. (Previously Presented) The DNA of claim 87, which is cDNA or genomic DNA.
96. (Currently Amended) The DNA of claim 87, wherein the DNA ~~codon usage~~ is optimized ~~within said DNA~~ to enhance the translation of codons in mammalian cells.
97. (Previously Presented) A non-replicating viral vector comprising the DNA of claim 87.
98. (Previously Presented) A replicable vector comprising the DNA of claim 87.
99. (Previously Presented) The replicable vector of claim 98, wherein the vector is a plasmid, cosmid, virus, viral

vector, λ phage or YAC.

100. (Previously Presented) The replicable vector of claim 98, wherein the vector is a plasmid.
101. (Previously Presented) The replicable vector of claim 99, wherein the vector is a viral vector.
102. (Previously Presented) A replicable vector comprising the DNA of claim 87, wherein the modified gp120 is further characterized by the absence of one or more of the variable loops present in unmodified gp120.
103. (Previously Presented) The replicable vector of claim 102, wherein the absent variable loop comprises V1, V2, V3 or a combination thereof.
104. (Currently Amended) The replicable vector of claim 102, wherein the absent variable loop comprises V1 and V2.
105. (Previously Presented) A host cell comprising the vector of claim 98.
106. (Currently Amended) The host cell of claim 105, which is a eukaryotic cell.
107. (Currently Amended) The host cell of claim 106, which is a mammalian cell.
108. (Currently Amended) The host cell of claim 107, which is a Chinese hamster ovary (CHO) cell.
109. (Currently Amended) The host cell of claim 105, which is a

bacterial cell.

110. (Currently Amended) The host cell of claim 105, further comprising a vector which expresses an endoprotease of the furin family.

111. (Previously Presented) A composition comprising the DNA of claim 87.

112. (Previously Presented) The composition of claim 111, wherein the composition comprises the DNA in a DNA plasmid, a replicating viral vector, or a non-replicating viral vector.

113. (Previously Presented) The composition of claim 112, further comprising an adjuvant.

114-125. (Canceled)

126. (Currently Amended) A DNA which upon transcription produces an RNA encoding a modified ~~HIV-1~~ gp140 polypeptide of an HIV-1 isolate, which polypeptide upon cleavage produces a modified gp120 and a modified gp41 ectodomain ~~of gp41~~ which together form a complex, said complex (i) exhibiting enhanced binding to HIV-1 neutralizing antibodies and reduced binding to HIV-1 non-neutralizing antibodies, wherein the modified gp120 ~~modifications~~ comprises a ~~mutation in gp120 selected from the group consisting of~~ V35C mutation, a Y39C mutation, a W44C mutation, a P484C mutation, a G486C mutation, a A488C mutation, a P489C mutation, a T490C mutation, or a ~~and~~ A492C mutation and a ~~mutation in ectodomain gp41 selected from the group consisting of~~ the modified gp41 ectodomain comprises a

D580C mutation, a W587C mutation, a T596C mutation, a V599C mutation, a P600C mutation, or a ~~and~~ W601C mutation, said mutations being numbered by reference to the HIV-1 isolate JR-FL, and (ii) permitting formation of ~~resulting in~~ a disulfide bond between the modified gp120 and the modified gp41 ectodomain ~~gp41~~ which stabilizes the complex ~~otherwise non-covalent gp120-gp41 interaction~~.

127. (Previously Presented) The DNA of claim 126, wherein the HIV-1 isolate represents a subtype selected from the group consisting of clades A, B, C, D, E, F, G, H and O.
128. (Previously Presented) The DNA of claim 127, wherein the HIV-1 isolate is HIV-1_{JR-FL}, HIV-1_{DH123}, HIV-1_{GUN-1}, HIV-1_{89.6} or HIV-1_{HXB2}.
129. (Previously Presented) The DNA of claim 126, wherein the modified gp120 is further characterized by the absence of one or more of the variable loops present in unmodified gp120.
130. (Previously Presented) The DNA of claim 129, wherein the absent variable loop comprises V1, V2, V3 or a combination thereof.
131. (Previously Presented) The DNA of claim 129, wherein the absent variable loop comprises V1 and V2.
132. (Currently Amended) The DNA of claim 126, wherein the modified gp120 is further characterized by the ~~absence or~~ presence of one or more canonical glycosylation sites ~~present or absent, respectively,~~ in unmodified gp120.

133. (Canceled)
134. (Previously Presented) The DNA of claim 126, which is cDNA or genomic DNA.
135. (Currently Amended) The DNA of claim 126, wherein the DNA ~~codon usage~~ is optimized ~~within said DNA~~ to enhance the translation of codons in mammalian cells.
136. (Previously Presented) A non-replicating viral vector comprising the DNA of claim 126.
137. (Previously Presented) A replicable vector comprising the DNA of claim 126.
138. (Previously Presented) The replicable vector of claim 137, wherein the vector is a plasmid, cosmid, virus, viral vector, λ phage or YAC.
139. (Previously Presented) The replicable vector of claim 137, wherein the vector is a plasmid.
140. (Previously Presented) The replicable vector of claim 138, wherein the vector is a viral vector.
141. (Previously Presented) A replicable vector comprising the DNA of claim 126, wherein the modified gp120 is further characterized by the absence of one or more of the variable loops present in unmodified gp120.
142. (Previously Presented) The replicable vector of claim 141, wherein the absent variable loop comprises V1, V2, V3 or a

combination thereof.

143. (Currently Amended) The replicable vector of claim 141, wherein the absent variable loop comprises V1 and V2.
144. (Previously Presented) A host cell comprising the vector of claim 137.
145. (Currently Amended) The host cell of claim 144, which is a eukaryotic cell.
146. (Currently Amended) The host cell of claim 145, which is a mammalian cell.
147. (Currently Amended) The host cell of claim 146, which is a Chinese hamster ovary (CHO) cell.
148. (Currently Amended) The host cell of claim 144, which is a bacterial cell.
149. (Currently Amended) The host cell of claim 144, further comprising a vector which expresses an endoprotease of the furin family.
150. (Previously Presented) A composition comprising the DNA of claim 126.
151. (Previously Presented) The composition of claim 150, wherein the composition comprises the DNA in a DNA plasmid, a replicating viral vector, or a non-replicating viral vector.
152. (Previously Presented) The composition of claim 150,

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further comprising an adjuvant.

153-158. (Canceled)